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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,879	01/30/2004	Chikara Manabe	118494	4106

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EXAMINER

MILLER, DANIEL H

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/766,879	Applicant(s) MANABE ET AL.	
	Examiner Daniel Miller	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
 4a) Of the above claim(s) 10--34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/30/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

The traversal is on the grounds that there is no undue burden in examining both the group I and group II claims. Applicants further argue that the groups of claims are not so unrelated as would require a burden beyond that of the normal burdens of examination. This argument has been considered, but not found persuasive. MPEP § 808.02 recites that for the purposes of the initial requirement of a restriction, a serious burden on the examiner may be prima facie shown if the examiner shows by appropriate explanation either separate classification, separate status in the art, or a different field of search as defined in MPEP § 808.02. Since the Examiner has shown a different classification for the two groups of claims, a burden for examining both groups has been shown.

The requirement is still deemed proper and is therefore made FINAL.

The examiner notes that claim 35, not claim 26 properly belongs to the elected article group. Therefore, the elected and examined group are claims 1-9 and 35 not 1-9 and 26.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, and 5-9 and are rejected under 35 U.S.C. 102(e) as being anticipated by Stupp et al (U.S. 6,890,654B2).
3. Regarding claim 1, Stupp teaches carbon nanotubes used as coated wires (column 11 line 17-23). The carbon nanotubes have an aggregation of amphiphiles around them (column 9 line 1-3). The amphiphiles (functional groups) include moieties that allow for cross-linking with each (column 9 line 15-20). The cross-linked amphiphiles surrounding the carbon nanotubes can be used to form stable structures (mesh) between adjacent molecules (column 7 line 27-32, 42-45). Regarding claim 2, the cross linking is taking place in a liquid solution containing a plurality of carbon nanotubes (column 2 line 62-68, column 3 line 1-10, column 10 line 55-60). The amphiphiles form cross-linking sites (column 9 line 25-30). Regarding claim 3, the molecule is oxidized which would inherently require a linking agent, which would inherently be in liquid solution as are the nanotubes and amphiphiles. The linking agent would be non-self polymerizable otherwise it would inhibit the intended reaction. Regarding claim 5, the cross-linking site is formed from dithiol bonds (column 9 line 33-35). Regarding claim 6, the reaction is an oxidative reaction. Regarding claim 7, the cross-linking dithiol bonds (-S-S-) (column 9 line 33-35). Regarding claim 8, the carbon nanotubes can be MWCNT's (column 5 line 45-49). Regarding claim 9, the core wire has a coating (column 11 line 21-24).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stupp et al (U.S. 6,890,654B2).

6. Regarding claim 4, while the reference is silent as to the presence of the functional groups recited by applicant however the reference does discuss the possibility of additional functionalization of the molecule (column 11 line 30-40). The cross-linking described by applicant are standard carboxylic acid and hydroxyl groups cross-linkings, as those contemplated by applicant as alternatives (column 5 line 60-68, column 6 line 1-6). Therefore it would have been obvious to have used applicants cross-linking structures.

7. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stupp et al (U.S. 6,890,654B2) in view of Lobovsky et al (U.S. 6,682,677).

8. Regarding claim 35, Stupp, discussed above, is silent as to the nanotubes being used as an electromagnet.

9. Lobovsky teaches a carbon nanotube ribbon or yarn that is used to create a winding for an electromagnet (column 15 line 46-60). The nanotubes are suited to this purpose because of their electrical conductivity and high thermal stability.

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10. It would be obvious to use the nanotubes of Stupp as a winding for an electromagnet, as in Lobovsky, because of their electrical conductivity and high thermal stability.

Conclusion

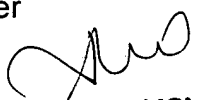
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Miller whose telephone number is (571) 272-1534. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Miller



JENNIFER MCNEIL
PRIMARY EXAMINER
3/6/06